CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. 93-113

GENERAL AMENDMENT OF WASTE DISCHARGE REQUIREMENTS:

FOR ALL MUNICIPAL SOLID WASTE LANDFILLS IN THIS REGION (AS SHOWN ON TABLE 1), TO IMPLEMENT STATE WATER BOARD RESOLUTION NO. 93-62, ADOPTED JUNE 17, 1993, AS STATE POLICY FOR WATER QUALITY CONTROL UNDER SECTION 13140 OF THE WATER CODE

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FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. **Federal authority**–The federal Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (42 USC §6901, *et seq.*, "**SWDA**"), authorizes development of nationwide standards for disposal sites for municipal solid waste (**MSW**), including criteria for sanitary landfills (SWDA §§1007, 4004, 42 USC §§6907, 6944);

2. **Federal MSW regulations**–On October 9, 1991, the United States Environmental Protection Agency (**USEPA**) promulgated regulations that apply, in California, to dischargers who own or operate Class II or Class III landfills at which municipal solid waste is discharged (**MSW landfills**), regardless of whether or not a permit is issued (Title 40, Code of Federal Regulations [**CFR**], Parts 257 and 258, "**federal MSW regulations**"). The majority of the federal MSW regulations become effective on October 9, 1993;

3. **States to apply federal MSW regulations**–Each state must "...adopt and implement a permit program or other system of prior approval and conditions to assure that each...[MSW landfill]...within such state...will comply with the...[federal MSW landfill regulations]." State regulations promulgated to satisfy this requirement are subject to approval by USEPA. (SWDA §§4003, 4005, 42 USC §§6943, 6945);

4. **Approved state's authority**–The permitting authority in an "approved state" (e.g., the Regional Water Board) may approve engineered alternatives to certain prescriptive standards contained in the federal MSW regulations, provided that the alternative meets all applicable conditions and performance standards contained therein (40 CFR §256.21);

5. **State Policy For Water Quality Control**–On June 17, 1993, the State Water Resources Control Board [**State Water Board**] adopted Resolution No. 93-62, entitled ***Policy for Regulation of Discharges of Municipal Solid Waste***, as State Policy For Water Quality Control (**Policy**), under Section 13140 *et seq.* of the California Water Code (WC §§13140 *et seq.*). The Policy directs each Regional Water Quality control Board (**Regional Water Board**) to revise the waste discharge requirements of each MSW landfill in its respective region to comply with the federal MSW regulations;

6. **Policy applied through WDRs**–All State agencies, including this Regional Water Board, are required to comply with State Policy For Water Quality Control regarding any activities that could affect water quality (WC §13146). Regional Water Boards regulate discharges of waste that could affect the quality of waters of the state, including discharges of waste to land at MSW landfills, through the issuance and revision of waste discharge requirements (WC §13263);

7. **Concurrent WDR revision**–The Regional Water Board can amend the waste discharger requirements of a group of similarly situated dischargers through a single board action in cases where the amended requirements properly apply to each of the dischargers whose waste discharge requirements are so amended;

8. **Need to document Existing Footprint**–The federal MSW regulations apply only to those areas of the MSW landfill that are outside what is herein refered to as landfill's **Existing Footprint**; therefore, it is to the advantage of both the discharger and the Regional Water Board to establish convincing documention of the landfill's Existing Footprint;

9. **VOCs**–Virtually all MSW landfills produce several volatile organic constituents (**VOCs**). VOCs exist in detectable concentrations in the gas and leachate produced by the landfill, and are not easily attenuated after being released from such a landfill; therefore, the federal MSW regulations require the use of VOCs as monitoring parameters;

10. **Use of non-statistical tests**–Statistical data-comparison methods typically used to detect the migration of wastes from a waste management unit cannot be used in cases where the constituent to be monitored has a background concentration which does not exceed the constituent's detection limit in at least ten percent of the background samples. In such cases, an alternataive non-statistical testing methodology is necessary which is sensitive, reliable, and not prone to falsely identifying a release;

11. **Exemption from CEQA**– This action is exempt from the provisions of the California Environmental Quality Act pursuant to Section 15308 Title 14 of the California Code of Regulations.

12. **Notification** — The Board has notified the dischargers and interested agencies and persons of its intent to amend waste discharge requirements for the discharge, and has provided them with an opportunity to submit their written views and recommendations. The Board in a public meeting heard and considered all comments pertaining to the discharge.

Therefore be it resolved:

§1. APPLICABILITY.

This order amends the waste discharge requirements (**WDRs**) of each of the following dischargers to include those sections of this order that are listed for each respective discharger. The provisions in the applicable sections of this order supercede any conflicting provision in the a landfill's existing WDRs.

Table 1. Waste Discharge Requirement Sections Applicable to Each Facility
Numbers refer to WDR Sections

Facility/ City	WDR/ County	1	2	3	4	5	6&7	8&9	10	11	12& 13	14,15 &16
Acme Landfill, Martinez	91-023 Contra Costa	X	X	X	X	X	X	X	X		X	X
American Canyon Landfill, Vallejo	85-101 Solano	X	X		X	X	X	X	X		X	X
Clover Flat Landfill, Calistoga	91-160 Napa	X	X		X	X	X	X	X		X	X
Guadalupe Rubbish Disposal Co., San Jose	90-139 Santa Clara	X	X		X		X	X	X		X	X
Hillside Class III Disposal Site, Colma	88-019 San Mateo	X	X		X		X	X	X		X	X
Keller Canyon Landfill, Pittsburg	91-052 Contra Costa	X	X		X	X	X	X		X	X	X
Kirby Canyon Landfill, Morgan Hill	85-047 Santa Clara	X	X		X		X	X	X		X	X
Mountain View Landfill, Mountain View	87-065 Santa Clara	X	X	X	X	X	X	X	X		X	X
Newby Island Landfill, Milpitas	87-152 Santa Clara	X	X	X	X	X	X	X	X		X	X
Ox Mountain Landfill, Half Moon Bay	92-087 San Mateo	X	X		X	X	X	X	X		X	X
Palo Alto Municipal Landfill, Palo Alto	88-038 Santa Clara	X	X	X	X		X	X	X		X	X
Potrero Hills Landfill, Fairfield	85-121 Solano	X	X		X	X	X	X	X		X	X
Redwood Landfill, Novato	85-015 Marin	X	X	X	X	X	X	X	X		X	X
Santa Clara All Purpose Landfill, Santa Clara	86-066 Santa Clara	X	X	X	X	X	X	X	X		X	X
Sunnyvale Landfill, Sunnyvale	89-105 Santa Clara	X	X	X	X	X	X	X	X		X	X
Tri-Cities Recycling & Disposal Facility, Fremont	90-051 Alameda	X	X	X	X	X	X	X	X		X	X
Vasco Road Sanitary Landfill, Livermore	86-042 Alameda	X	X		X		X	X	X		X	X
West Contra Costa Sanitary Landfill Richmond	88-109 Contra Costa	X	X	X	X	X	X	X	X		X	X
West Marin Sanitary Landfill, Pt. Reyes Station	85-079 Marin	X	X		X		X	X	X		X	X
Zanker Road Landfill, San Jose	87-032 Santa Clara	X	X	X	X	X	X	X	X		X	X

Note: Regarding Section 16, Keller Canyon and West Contra Costa Sanitary Landfills are Class II Facilities.

§2. DEFINITIONS.

The following terms of art apply to this Order.

- **"Affected Persons"** means all individuals who either own or occupy land outside the boundaries of the parcel upon which the landfill is located that has been or may be affected by the release of leachate or waste constituents (in gas or liquid phase) from an MSW landfill.
- **"Background Monitoring Point"** means a device (e.g., well) or location (e.g., a specific point along a lakeshore), upgradient or sidegradient from the landfill and assigned by this Order, where water quality samples are taken that are not affected by any release from the landfill and that are used as a basis of comparison against samples taken from downgradient Monitoring Points.
- **"Composite liner"** means a liner that consists of two or more components, which include a Synthetic Liner in direct and uniform contact with an underlying layer of prepared, low-permeability soil such that the net permeability of the resulting combination is significantly less than would be expected by reference to the permeability of the individual components layers.
- **"Constituents of Concern (COC)"** are those constituents which are likely to be in the waste in the MSW landfill or which are likely to be derived from waste constituents in the event of a release. The Constituents of Concern for each MSW landfill under §1 of this Order are those listed in the Monitoring and Reporting Program for that MSW landfill, pursuant to §10 and §11 of this Order.
- **"Existing Footprint"** means the portion of land covered by waste discharged to an MSW landfill unit as of midnight on the day before October 9, 1993. The term includes the area under the active face of the landfill as well as all portions of the landfill unit containing waste that is obscured from view by daily, intermediate, or permanent cover. The term includes only areas covered with waste that is discharged in a manner that is consistent either with past operating practices or with modifications thereof that ensure good management of the waste. The term has the same meaning as the area enclosed by the "waste boundaries of an existing MSWLF unit", as used in the definition of the federal term of art "lateral expansion" in 40 CFR §258.2.
- **"Federal MSW regulations"** means the regulations promulgated by the United States Environmental Protection Agency on October 9, 1991 (Title 40, Code of Federal Regulations [CFR], Parts 257 and 258).
- **"Matrix effect"** means any change in the method detection limit or practical quantitation limit for a given analyte as a result of the presence of other constituents–either of natural origin or introduced by man as a result of a release or spill–that are present in the sample of water or soil-pore gas being analyzed.
- **"MDL"**–see "Method detection limit (MDL)"

- **"Method detection limit (MDL)"** means the lowest concentration associated with a 99% reliability of a "non-zero" analyitical result. The MDL shall reflect the detection capabilities of the specific analytical procedure and equipment used in the laboratory. MDLs reported by the laboratory shall not simply be restated from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs are expected to closley agree with published USEPA MDLs. If a lab suspects that, due to matrix or other effects, the detection limit for a particular analytical run differs significantly from the laboratory-derived MDL, the results should be flagged accordingly, along with an estimate of the detection limit achieved.
- **"Monitoring Parameters"** means the short list of constituents and parameters used for the majority of monitoring activity at a given MSW landfill. The Monitoring Parameters for each MSW landfill are listed in §10 of this Order. Monitoring for the short list of Monitoring Parameters constitutes "indirect monitoring", in that the results are used to indicate indirectly the success or failure of adequate containment for the longer list of Constituents of Concern.
- **"Monitoring Point"** means a device (e.g., well) or location (e.g., a specific point along a lakeshore), downgradient from the landfill and that is assigned in this Order, at which samples are collected for the purpose of detecting a release by comparison with samples collected at Background Monitoring Points.
- **"MSW"** means municipal solid waste.
- **"MSW landfill"**–for the purpose of this Order, means a Class II or Class III landfill in this region that accepts, or has accepted, municipal solid wastes, and that is subject to regulation under either or both Chapter 15 and the federal MSW regulations.
- **"PQL"**–see "Practical quantitation limit (PQL)"
- **"Practical quantitation limit (PQL)"** means the lowest constituent concentration at which a numerical concentration can be assigned with a 99% certainty that its value is within +/-10% of the consituent's actual concentration in the sample. The PQL shall reflect the Quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. PQLs reported by the laboratory shall not simply be restated from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived PQLs are expected to closley agree with published USEPA PQLs. If the lab suspects that, due to matrix or other effects, the quantitation limit for a particular analytical run differs significantly from the laboratory-derived PQL, the results should be flagged accordingly, along with an estimate of the detection limit achieved.
- **"Reporting Period"** means the time period covered by each regualarly submitted Self-Monitoring Report. Unless changed by the Executive Officer, there are two Reporting Periods per year: the WinterSpring Period (October 1 through March 31) and the Summer/Fall Period (April 1, through September 30). Self Monitoring Reports are due 30 days after the end of the Reporting Period, (e.g., April 30 and October 30 of each year). In addition, the

Reporting Period for COCs begins during the 1995/1996 Winter/Spring Period, and occurs every five years thereafter pursuant to §13(b)(3).

- **"Sample size"**:
  - (a) For Monitoring Points, means the number of data points–obtained from a given Monitoring Point during a given Reporting Period–used for carrying out the statistical or non-statistical analysis of a given analyte during a given Reporting Period; or
  - (b) For Background Monitoring Points, means the number of new and existing data points–collected under §§2550.7(e)(11 and 12) from all applicable Background Monitoring Points in a given monitored medium–used to collectively represent the background concentration and variability of a given analyte in carrying out statistical or non-statistical analysis of that analyte during a given Reporting Period.
- **"Synthetic Liner"** means a layer of flexible, man-made material that is installed in accordance with the standard of the industry over an area of land prior to the discharge of waste there.
- **"VOCs"** – see "volatile organic constituents (VOCs)"
- **"VOC_{water}"** means the composite monitoring parameter encompassing all VOCs that are detectable in less than ten percent of applicable background samples from a monitored water-bearing medium (e.g., the unsaturated zone, the uppermost aquifer, a zone of perched ground water, or a surface water body). This parameter is analyzed via the non-statistical analytical method described elsewhere in this Order to identify a release to waters of the state of VOCs whose presence in background water is detected too infrequently to allow statistical analysis.
- **"Volatile organic constituents (VOCs)"** means the suite of organic constituents having a high vapor pressure. The term includes at least the 47 organic constituents listed in Appendix I to 40 CFR Part 258.

§3. 100-YEAR FLOODPLAIN.

The discharger owning or operating an MSW landfill that will receive waste on or after October 9, 1993, and that is located within the floodplain of a 100-year return interval storm shall comply with 40 CFR §§258.11 and 258.16 by doing either of the following:

(a) **Report (Floodplain)**–The discharger shall submit a report to the Regional Water Board **by October 9, 1993**, that meets the requirements of 40 CFR §258.11 by demonstrating, to the satisfaction of the Regional Water Board's Executive Officer, that during the flood from a 100-year return interval storm the landfill:

(1) **Flow restriction**—Will not materially restrict the flow of the flood;

(2) **Temporary storage capacity**—Will not materially reduce the temporary water storage capacity of the floodplain; and

(3) **Physical damage**—Will not suffer washout, inundation, or other damage as a result of the flood; or

(b) **Closure absent compliance**—In case the requirements of §(a) of this section are not met to the satisfaction of the Regional Water Board, the discharger shall close the landfill in accordance with 40 CFR §§258.16 and 258.60, and with Article 8 of Chapter 15.

§4. DOCUMENTING THE LANDFILL's EXISTING FOOTPRINT.

The discharger owning or operating an MSW landfill that will receive waste on or after October 9, 1993, shall document the Existing Footprint of the waste using aerial photographs and a topographic map, and shall submit a copy of such documentation in the form of a report to the Regional Water Board, which shall be submitted prior to, or as part of, the first scheduled monitoring report following October 9, 1993. The aerial photographs and topogeaphic map shall be at the same scale and not exceed 1" = 400'. Two sets of aerial photographs must be submitted. The waste boundary must be marked on one set of photographs. The second set should not have the waste boundary marked on it. The aerial photographs may not be older than October 9, 1992.

§5. MSW LANDFILLS ON OR ADJOINING WETLANDS.

Discharge of municipal solid waste to a wetland—as that term is defined in 40 CFR §232.2(r)—or to any portion thereof is prohibited, unless the Regional Water Board's finds that the discharger has successfully completed all demonstrations required for such discharge under 40 CFR §258.12(a). Such determination shall be based upon a **report** containing **(a)** a copy of the material considered by the U.S. Army Corps of Engineers (**Army Corps**) in granting a Section 404 Permit for such discharge, **(b)** a copy of each Army Corps response to those submittals, and **(c)** any additional materials requested by the Regional Water Board.

§6. LIQUIDS ACCEPTANCE.

As of October 9, 1993, the discharge of leachate or landfill gas condensate to an MSW landfill is prohibited, unless:

(a) The landfill gas condensate or leachate is being returned to the landfill that produced it; and

(b) The portion of the landfill to which these materials are discharged is equipped with a containment system meeting the requirements of §§7(a)(1 or 3) and (b) of this Order.

§7. CONTAINMENT SYSTEMS INSTALLED BEYOND THE EXISTING FOOTPRINT.

Discharge prohibition—As of October 9, 1993, discharges of municipal solid waste to either an MSW landfill that has not received waste as of that date or to any area beyond the Existing Footprint of an MSW landfill unit are prohibited unless such discharge is to an area equipped with a containment system which is constructed in accordance with the standard of the industry and which meets the following additional requirements for both liners and leachate collection systems.

(a) **Standards for liners.**

(1) **Post-October 9, 1993 construction**—Except as provided in either §7(a)(3) [for steep sideslopes] or §7(a)(2) [for new discharges to pre-existing liners], after October 9, 1993, all containment systems shall include a composite liner that consists of an upper synthetic flexible membrane component (**Synthetic Liner**) and a lower component of soil, and that the Regional Water Board Executive Officer agrees meets the following requirements. The composite liner either:

(A) **Prescriptive Design:**

1. **Upper component**—Has a Synthetic Liner at least 40-mils thick (or at least 60-mils thick if of high densigh polyethylene) that is installed in direct and uniform contact with the underlying compacted soil component described in §7(a)(1)(A)2.; and

2. **Lower component**—Has a layer of compacted soil that is at least two feet thick and that has an hydraulic conductivity of no more than 1×10^{-7} cm/sec (0.1 feet/year); or

(B) **Alternative design**—Satisfies the performance criteria contained in 40 CFR §§258.40(a)(1) and (c), and satisfies the criteria for an engineered alternative to the above Prescriptive Design [as provided by 23 CCR §2510(b)], where the performance of the alternative composite liner's components, in combination, equal or exceed the waste containment capability of the Prescriptive Design;

(2) **New discharges to liners constructed prior to October 9, 1993**—Except as provided in §7(a)(3) [for steep sideslopes], containment systems that will begin to accept municipal solid waste after October 9, 1993, but which have been constructed prior to the Federal deadline, are not required to meet the provisions of §7(a)(1) if the containment system includes a composite liner meeting the following requirements to the satisfaction of the Regional Water Board Executive Officer. The liner must:

(A) **Prescriptive Design**—Feature as its uppermost component a Synthetic Liner at least 40-mils thick (or at least 60-mils if high density polyethylene) that is installed in direct and uniform contact with the underlying materials: and

(B) **Performance**—Meet the performance criteria contained in 40 CFR §§258.40(a)(1) and (c);

(3) **Steep Sideslopes**—Containment systems installed in those portions of an MSW landfill where an engineering analysis shows, to the satisfaction of the Regional Water Board Executive Officer, that sideslopes are too steep to permit construction of a stable composite liner that meets the prescriptive standards contained in §§7(a)(1 or 2) shall include an alternative liner that, to the satisfaction of the Regional Water Board Executive Officer, both meets the performance criteria contained in 40 CFR §§258.40(a)(1) and (c) and either:

(A) **Composite liner**–Is a composite liner and includes as its uppermost component a Synthetic Liner at least 40-mils thick (or at least 60-mils if high density polyethylene) that is installed in direct and uniform contact with the underlying materials; or

(B) **Noncomposite liner**–Is not a composite liner, but includes a Synthetic Liner at least 60-mils thick (or at least 80-mils if of high density polyethylene) that is installed in direct and uniform contact with the underlying materials.

(b) **Standards for leachate collection**–All liner systems shall include a leachate collection and removal system which, to the satisfaction of the Regional Water Board Executive Officer, conveys to a sump [or other appropriate collection area lined in accordance with §7(a)] all leachate reaching the liner, and which does not rely upon unlined or clay-lined areas for such conveyance.

§8. WATER QUALITY PROTECTION STANDARD.

(a) **Monitoring program's beginning date**—Unless the discharger proposes, and the Regional Water Board approves, an alternative water quality protection standard that meets the requirements of both 23 CCR §2550.2 and 40 CFR §§258.50 *et seq.*, the discharger shall monitor compliance with this Order using a water quality protection standard that is created in accordance with §§(b) and (c) of this section. The discharger shall implement the requirements of this section, as follows:

(1) **Determination submittal**—Dischargers listed in Section 1 of this Order have until **October 9, 1993**, to submit a **report** that demonstrates, to the satisfaction of the Regional Water Board Executive Officer, that their respective MSW **landfill** is **not** located **within one mile of a drinking water intake**, including any well, spring, or surface water intake used for such purpose;

(2) **One mile or less**—Unless the Regional Water Board finds that a landfill is not within one mile of a drinking water intake, the discharger shall **submit a monitoring system report by** no later than **August 9, 1994**, that meets the requirements of §§(b) and (c) of this section to the satisfaction of the Regional Water Board's Executive Officer, **and** shall **implement** applicable portions of the **water quality monitoring program** described in this Order **by October 9, 1994**;

(3) **More than one mile**—For any MSW landfill that the Regional Water Board finds is more than one mile from the closest drinking water intake, the discharger shall **submit a monitoring system report** by no later than **August 9, 1995,** that meets the requirements of §§(b) and (c) of this section to the satisfaction of the Regional Water Board's Executive Officer, **and** shall **implement** applicable portions of the **water quality monitoring program** described in this Order **by October 9, 1995.**

(b) **Concentration Limits**–The Concentration Limit for each Constituent of Concern shall be as determined under §12 of this Order.

(c) **Report required (monitoring system)**–The report required under §§(a)(2 or 3) of this section shall:

(1) **Identification of ground water bodies**—Identify all distinct bodies of ground water that could be affected in the event of a release from the landfill. This list shall include at least the uppermost aquifer underlying the landfill and any permanent or ephemeral zones of perched water underlying the landfill;

(2) **Monitoring system performance**–Demonstrate that the landfill's existing and proposed monitoring systems satisfy the following requirements:

(A) **Ground water monitoring system(s)**–The ground water monitoring system for each distinct ground water body identified above must meet the requirements of 40 CFR §§258.51(a,c, and d) and 23 CCR §2550.7(b); and

(B) **Monitoring systems for other media**–Only for dischargers whose waste discharge requirements, as of the effective date of this Order, have not been revised to incorporate the July 1, 1991, revisions to Article 5 of Chapter 15:

1. **Surface water monitoring system(s)**–An MSW landfill in close proximity to any affectable surface water body must meet the requirements of 23 CCR §2550.7(c); and

2. **Unsaturated zone monitoring system(s)**–An MSW landfill overlying an unsaturated zone that can be monitored feasibly must meet the requirements of 23 CCR §2550.7(d);

(3) **Monitoring Points and Background Monitoring Points**–Include a map showing the Monitoring Points and Background Monitoring Points validated under §(c)(2) of this section and showing the Point of Compliance under 23 CCR §2550.5 (i.e., the downgradient boundary of the unit, with respect to the flow direction of ground water in the uppermost aquifer);

(4) **Compliance Period**–Estimate the Compliance Period under 23 CCR §2550.6; and

(5) **Constituents of Concern**–Include a list of all Constituents of Concern under §§10 or 11 of this Order.

§9. MONITORING PARAMETERS.

Beginning on the date established under §8(a) of this Order (on October 9 of either 1994 or 1995), the Discharger shall analyze water samples from each water-bearing medium separately for the following Monitoring Parameters— unless the Regional Water Board approves alternative Monitoring Parameters that meet the requirements of both 23 CCR §§2550.0 *et seq.* and 40 CFR §§258.54—and shall test the resulting data using either the statistical and non-statistial methods listed in §13(f) of this Order or alternative methods the Regional Water Board finds meets the requirements of 23 CCR §§2550.7(e)(6-10) and 40 CFR §258.53:

(a) **Monitoring Parameters that use statistical methods:**

(1) **Metals surrogates under 40 CFR §258.54(a)(2) for the following Bay-Front landfills: Mountain View Landfill, Newby Island Landfill, Palo Alto Municipal Landfill, Santa Clara All Purpose Landfill, Sunnyvale Landfill, Acme Landfill, Redwood Landfill and Zanker Road Landfill**—pH, total organic carbon (**TOC**), and Total Nitrogen (the sum of Nitrate Nitrogen and Kjeldahl Nitrogen). All other landfills listed on Table 1 shall use the following metals surrogates—pH, total dissolved solids (**TDS**), Chloride, Sulphate, and Nitrate Nitrogen;

(2) **Each VOC in background**—Each VOC that exceeds its respective MDL in at least ten percent of the samples taken from the Background Monitoring Points for a monitored water-bearing medium (i.e., surface water body, aquifer, perched zone, or soil-pore liquid) during a given Reporting Period; and

(b) **Monitoring Parameter that uses non-statistical method**–The composite monitoring parameter "**VOC_{water}**".

§10. CONSTITUENTS OF CONCERN (COCs) FOR LANDFILLS LACKING A FUNCTIONING LCRS.

As of the date established under §8(a) of this Order (on October 9 of either 1994 or 1995), for any MSW landfill that does ***not*** have both a liner and a leachate collection and removal system (**LCRS**) that produces leachate:

(a) **Known constituents plus Appendix II**–The "**COC list**" (list of Constituents of Concern required under 23 CCR §2550.3) is hereby revised to include all constituents listed in the waste discharge requirements as of the effective date of this Order, in addition to all constituents listed in Appendix II to 40 CFR Part 258 (**Appendix II constituent**). The discharger shall monitor all COCs every five years, pursuant to §13(b)(3) of this Order; and

(b) **Background sampling for new constituents**–For each Appendix II constituent that is newly added to the MSW landfill's COC list, the discharger shall establish a reference background value by analyzing at least one sample each quarter from each Background Monitoring Point for a period of at least one year, beginning with

the date of this Order. Once this reference set of background data is collected, the discharger shall include it as a separate, identified item in the next monitoring report submittal. The discharger may establish background values for anthropogenic (i.e., man-made or synthetic) organic compounds listed in Appendix II at the method detection limit for these consituents in lieu of quareterly analysis where such are not reasonably expected to be present in background concentrations.

§11. CONSTITUENTS OF CONCERN (COCs) FOR LANDFILLS HAVING A FUNCTIONING LCRS.

Beginning on the date established under §8(a) of this Order (on October 9 of either 1994 or 1995), for any MSW landfill equipped both with a liner and with a leachate collection and removal system (**LCRS**) that produces leachate, the discharger shall develop and maintain the Constituent of Concern (under 23 CCR §2550.3, **"COC list"**) as follows.

(a) **Building and augmenting the COC list**–The Constituent of Concern list includes:

(1) **Known constituents**–All waste constituents listed in the waste discharge requirements as of the effective date of this Order; and

(2) **Ongoing leachate analysis program**–Each constituent listed in Appendix II to 40 CFR Part 258 (**Appendix II constituent**) that is not already a COC for the landfill, and that both:

(A) **October leachate sample and report**–Is detected in a **sample** of the landfill's **leachate** which the discharger shall collect **in October** or as soon as leachate appears in the LCRS during the Winter/Spring reporting period of each year.

The discharger shall **report** to the Regional Water Board **by no later than January 31** of a given year the analytical results of the leachate sample taken the previous October, including an identification of all detected Appendix II constituents that are not on the landfill's Constituent of Concern list (**non-COCs**); and

(B) **April retest of leachate and report**–Is also detected in a retest leachate sample collected the following April or as soon as leachate appears in the LCRS during the Summer/Fall reporting period.

The discharger need take and analyze this **retest** sample **only** in cases **where the annual leachate sample**, taken the previous October under §(a)(2)(A) of this section, **identifies non-COCs**. The retest sample shall be analyzed only for the non-COCs detected in the October sample. During any year in which an **April leachate retest** is carried out, the discharger shall submit a **report** to the Regional Water Board, **by no later than August 1** of that year, identifying all constituents which must be

added to the landfill's COC list as a result of having been detected in both the (previous calendar year's) October sample and in the April retest sample;

(b) **Background sampling for new constituents [23 CCR §2550.7(e)(6)]**—For each Appendix II constituent that is newly added to the MSW landfill's COC list [pursuant to §(a)(2)(B) of this section], the discharger shall establish a reference background value in each monitored medium by analyzing at least one sample each quarter from each Background Monitoring Point for a period of at least one year following the date the constituent is submitted to the Regional Water Board as a new COC. Once this reference set of background data is collected, the discharger shall include it as a separate, identified item in the next monitoring report submittal.

§12. CONCENTRATION LIMITS.

As of the date established under §8(a) of this Order (on October 9 of either 1994 or 1995), **the concentration limit for any given Constituent of Concern or Monitoring Parameter** in a given monitored medium (e.g., the uppermost aquifer) at an MSW landfill **shall be as follows,** and shall be used as the basis of comparison with data from the Monitoring Points in that monitored medium:

(a) **Background per revised Article 5**—The background value established in the WDRs by the Regional Water Board for that constituent and medium, pursuant to 23 CCR §§2550.4 and 2550.7(e)(6,7,10, and 11);

(b) **Concurrent background**—The constituent's background value, established anew during each Reporting Period using only data from all samples collected during that Reporting Period from the Background Monitoring Points for that monitored medium. Either:

(1) The mean (or median, as appropriate) and standard deviation (or other measure of central tendency, as appropriate) of the constituent's background data; or

(2) The constituent's MDL, in cases where less than 10% of the background samples exceed the constituent's MDL; or

(c) **CLGB option for corrective action**—A concentration limit greater than background, as approved by the Regional Water Board for use during-or-after corrective action [see 23 CCR §§2550.4(c-i)].

§13. DETECTION MONITORING PROGRAM (DMP) UNDER REVISED ARTICLE 5.

The following detection monitoring program begins to apply to each MSW landfill listed in §1 of this Order on the date established under §8(a) of this Order (on October 9 of either 1994 or 1995), unless and until the Executive Officer approves

an alternative detection monitoring program that complies both with the federal MSW regulations and with the most recent revisions to Article 5 of Chapter 15.

(a) **SAMPLING AND ANALYTICAL METHODS**–Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA Methods (USEPA publication "SW-846"), and in accordance with an approved sampling and analysis plan. **The discharger shall submit such a sampling and analysis plan to the Regional Water Board by August 9, 1994.** Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. Specific methods of analysis must be identified. If methods other than USEPA-approved methods or Standard USEPA Methods are used, the exact methodology must be submitted for review and must be approved by the Executive Officer of the Regional Water Quality Control Board prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Water Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements. In addition, the discharger is responsible for seeing that the laboratory analysis of all samples from Monitoring Points and Background Monitoring Points meets the following restrictions:

(1) **Method selection**–The methods of analysis and the detection limits used shall be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., "trace" or "ND") in data from Background Monitoring Points for that medium, the analytical method having the lowest method detection limit (**MDL**) shall be selected from among those methods which would provide valid results in light of any Matrix Effects involved. In any event, for Appendix I organic chemical consistuents use EPA Method 8260, and for the remaining organic chemical consituents in Appendix II use EPA Methods 8270, 8151, and 8141;

(2) **"Trace" results**–Analytical results falling between the MDL and the practical quantitation limit (**PQL**) shall be reported as "trace", and shall be accompanied both by the (nominal or estimated) MDL and PQL values for that analytical run;

(3) **Nominal MDL and PQL**–MDLs and PQLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These nominal MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived nominal MDL/PQL values, the results shall be flagged accordingly, along with an estimate of the detection limit and quantitation limit actually achieved;

(4) **QA/QC data**–All QA/QC data shall be reported, along with the sample results to which it applies, including the method, equipment, and analytical

detection limits, the recovery rates, an explanation for any recovery rate that is less than 80%, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recovery. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged;

(5) **Common laboratory contaminants**–Upon receiving written approval from the Executive Officer, an alternative statistical or non-statistical procedure can be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (e.g., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Reporting Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Water Board staff;

(6) **Unknowns**–Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte; and

(7) **MDL and PQL**–The MDL and PQL shall be determined in accordance with the definitions of those terms in Article 2 of this Order.

(b) **REQUIRED MONITORING REPORTS.**

(1) **Detection monitoring report twice-annually**–For each monitored medium, all Monitoring Points assigned to detection monitoring [under §8(c)(2) of this Order], and all Background Monitoring Points shall be monitored once each Winter/Spring and Summer/Fall (**Winter/Spring and Summer/Fall Reporting Periods end on March 31 and September 30, respectively**) for the Monitoring Parameters listed in §9 of this Order. Monitoring for Monitoring Parameters shall be carried out in accordance with §§(d)(2) and (f) of this section, and the report shall meet the requirements of §(b)(4) of this section.

(2) **Annual summary report**–The discharger shall submit an annual report to the Board covering the previous monitoring year. **The Reporting Period ends March 31.** This report may be combined with the Winter/Spring detection monitoring report under §(b)(1) of this section, and shall meet the requirements of §(b)(4) of this section in addition to the following:

(A) **Graphical Presentation of Analytical Data [under 23 CCR §2550.7(e)(14)]**–For each Monitoring Point and Background Monitoring Point, submit in graphical format the laboratory analytical data for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents over time for a given Monitoring Point or Background Monitoring Point, at a scale appropriate to show trends or variations in

water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. On the basis of any aberrations noted in the plotted data, the Executive Officer may direct the discharger to carry out a preliminary investigation [23 CCR §2510(d)(2)], the results of which will determine whether or not a release is indicated;

(B) **Table and diskette(s)**–All monitoring analytical data obtained during the previous two six-month (Monitoring Parameter) Reporting Periods, presented in tabular form as well as on diskettes (either in MS-DOS/ASCII format or in another file format acceptable to the Regional Water Board Executive Officer). Data sets too large to fit on a single diskette may be submitted on disk in a commonly available compressed format (e.g., PK-ZIP or NORTON BACKUP) acceptable to the Regional Water Board Executive Officer. The Regional Water Board regards the submittal of data in hard copy and on diskette as "...the form necessary for..." statistical analysis [23 CCR §2550.8(h)], in that this facilitates periodic review by the Board's statistical consultant;

(C) **Compliance record discussion**–A comprehensive discussion of the compliance record, and of any corrective actions taken or planned which may be needed to bring the discharger into full compliance with the landfill's waste discharge requirements;

(D) **Waste allocation map**–A map showing the area, if any, in which filling has been completed during the previous calendar year;

(E) **Summary of changes**–A written summary of monitoring results and monitoring system(s), indicating any changes made or observed since the previous annual report; and

(F) **Leachate control**–For units having leachate monitoring/control facilities, an evaluation of their effectiveness, pursuant to 23 CCR §§2543(b,c, & d).

(3) **COC Report at least every five years**–In the absence of a release being indicated [i.e., under §§(b)(2)(A), (c)(3), (c)(6)(C), or (f)(3) of this section], the discharger shall monitor all constituents of concern (**COCs**) and submit a report (**COC Report**) as follows:

(A) **Reporting Period for COCs**–The discharger shall sample all Monitoring Points and Background Monitoring Points for each monitored medium for all **COCs every fifth year**, beginning with the Spring of 1996 (**first Reporting Period ends March 31, 1996**), with subsequent COC monitoring efforts being carried out **every fifth year thereafter** alternately in the **Fall (Reporting Period ends September 30)** and **Spring (Reporting Period ends March 31)**. The COC Report may be combined with any Monitoring Parameter Report [under §(b)(1) of this section] or Annual Summary Report [under §(b)(2) of this section] having a Reporting Period that ends at the same time. The COC Report shall meet the requirements of §(b)(4) of this section;

(B) **Monitoring Parameters not repeated**—The discharger shall monitor for all Constituents of Concern in accordance with §§(d)(2) and (f) of this section, provided that such monitoring need only encompass those Constituents of Concern that do not also serve as Monitoring Parameters.

(4) **Minimum monitoring report contents**–All reports shall be submitted no later than one month following the end of their respective Reporting Period. The reports shall be comprised of at least the following, in addition to the specific contents listed for each respective report type under §§(b)(1,2, or 3) of this section:

(A) **Transmittal letter**–A letter summarizing the essential points in the report. This letter shall include a **discussion of any requirement violations** found since the last such report was submitted, and shall **describe actions taken or planned for correcting those violations.** If the discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. Each monitoring report and the transmittal letter shall be **signed by a principal executive officer** at the level of vice president or above, or by his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The transmittal letter shall contain a statement by this official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct;

(B) **Compliance evaluation summary**–For Detection Monitoring and COC Reports only, a compliance evaluation summary containing at least:

1. **Flow rate/direction**–For each monitored ground water body, a description and graphical presentation (e.g., arrow on a map) of the velocity and direction of ground water flow under/around the Unit, based upon water level elevations taken during the collection of the water quality data submitted in the report;

2. **Well information**– For each monitoring well addressed by the report, a description of the method and time of water level measurement, and a description of the method of purging used both before sampling to remove stagnant water in the well, and after sampling to remove the water that was in the well bore while the sample was being taken; and

3. **Sampling Information**– For each Monitoring Point and Background Monitoring Point addressed by the report, a description of the type of pump–or other device–used and its vertical placement for sampling, and a detailed description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name

and qualifications of the person actually taking the samples, and any other observations);

(C) **Map**–A map (or copy of an aerial photograph) showing the locations of observation stations, Monitoring Points, and Background Monitoring Points;

(D) **Laboratory data**–For Detection Monitoring and COC Reports only, the laboratory results of all analyses, in compliance with §(a) of this section;

(E) **Leachate and run on/off control statement**–A statement as to the condition and performance of any leachate monitoring and control facilities, and of the run-off/run-on control facilities; and

(F) **Waste placement and type**–The quantity and types of wastes discharged and the locations in the landfill where waste has been placed since submittal of the last such report.

(c) **CONTINGENCY RESPONSES.**

(1) **Leachate seep**–The discharger shall immediately report by telephone concerning the discovery any previously unreported seepage from the disposal area. A written report shall be filed with the Board within seven days, containing at least the following information:

(A) **Map**—A map showing the location(s) of seepage;

(B) **Flow rate**—An estimate of the flow rate;

(C) **Description**—A description of the nature of the discharge (e.g., all pertinent observations and analyses); and

(D) **Corrective measures** approved (or proposed for consideration) by the Regional Water Board Executive Officer.

(2) **Response to an initial indication of a release**–Should the initial statistical or non-statistical comparison [under §(f)(1 or 2) of this section, respectively] indicate, for any Constituent of Concern or Monitoring Parameter, that a release is tentatively identified, the discharger shall immediately notify their designated Regional Water Board staff contact verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved, shall provide written notification by certified mail within seven days of such determination [23 CCR §2550.8(j)(1)], and shall carry out a discrete retest in accordance with §§(d)(2) and (f)(3) of this section. If the retest confirms the existence of a release, the discharger shall carry out the requirements of §(c)(4) of this section. In any case, the discharger shall inform the Regional Water Board of the outcome of the retest as soon as the results are available, following up with written results submitted by certified mail within seven days of completing the retest.

(3) **Physical evidence of a release**–If either the discharger or the Regional Water Board Executive Officer determines that there is significant physical evidence of a release [23 CCR §2550.1(3)], the discharger shall conclude that a release has been discovered and shall:

(A) **Notify**—Immediately notify the Regional Water Board of this fact by certified mail (or acknowledge the Regional Water Board's determination);

(B) **Investigate**—Carry out the requirements of §(c)(4) of this section for all potentially-affected monitored media; and

(C) **Additional work**—Carry out any additional investigations stipulated in writing by the Regional Water Board Executive Officer for the purpose of identifying the cause of the indication.

(4) **Release discovery response**–If the discharger concludes that a release has been discovered:

(A) **COC scan**–If this conclusion is ***not*** based upon monitoring for all Constituents of Concern, pursuant to §(b)(3) of this section, then the discharger shall, **sample for all Constituents of Concern at all Monitoring Points in the affected medium and submit them for laboratory analysis within thirty days of discovery.** Within **seven days** of receiving the laboratory analytical results, the discharger shall **notify** the Regional Water Board, **by certified mail**, of the concentration of all Constituents of Concern at each Monitoring Point; this notification shall include a synopsis showing, for each Monitoring Point, those constituents that exhibit an unusually high concentration. Because the data from this scan is not to be statistically tested against background, only a single datum is required for each Constituent of Concern at each Monitoring Point [23 CCR §2550.8(k)(1)];

(B) **Submittal of proposed EMP**–The discharger shall, **within 90 days** of discovering the release, submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring Program that **1.** meets the requirements of 23CCR §2550.8(k)(5) and §2550.9, and **2.** satisfies the requirements of 40 CFR §258.55(g)(1)(ii) by committing to install at least one monitoring well at the facility boundary directly downgradient of the center of the release, immediately after delineating the nature and extent of the release under 23 CCR §2550.9(b);

(C) **Submittal of engineering feasibility study**–The discharger shall, **within 180 days** of discovering the release, submit a preliminary engineering feasibility study meeting the requirements of 23 CCR §2550.8(k)(6); and

(D) **Initiation of nature-and-extent deliniation**—The discharger shall immediately begin delineating the nature and extent of the release by installing and monitoring assessment wells as necessary to assure that the discharger can meet the requirement [under 23 CCR §2550.9(b)] to submit a delineation report within 90 days of when the Regional Water Board directs the discharger to begin the Evaluation Monitoring Program. This report shall show the vertical and horizontal limits of the release for all Constituents of Concern. This delineation effort shall be carried out in addition to any ongoing monitoring program (e.g., detection monitoring program); nevertheless, the discharger's delineation effort shall encompass all relevant monitoring data.

(5) **Release beyond facility boundary**–Any time the discharger concludes (or the Regional Water Board Executive Officer directs the discharger to conclude) that a release from the Unit has proceeded beyond the facility boundary, the discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (**Affected Persons**).

(A) **Initial notice**–Initial notification to Affected Persons shall be accomplished **within 14 days** of making this conclusion and shall include a description of the discharger's current knowledge of the nature and extent of the release.

(B) **Updated notice**–Subsequent to initial notification, the discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, **within 14 days** of concluding there has been any material change in the nature or extent of the release.

(C) **Submittal**–Each time the discharger sends a notification to Affected Persons [under §§(c)(5(A or B), above], the discharger shall provide the Regional Water Board, within seven days of sending such notification, with both a copy of the notification and a current mailing list of Affected Persons.

(6) **Response to VOC Detection in Background.**

(A) **Detection and verification**–Except for VOCs validated as not having come from the landfill, under §(c)(6)(B), **any time the laboratory analysis of a sample from a Background Monitoring Point**, sampled for VOCs under §(f) of this section, **shows either a.** two or more VOCs above their respective MDL, **or b.** one VOC above its respective PQL, **then** the discharger shall immediately notify the Regional Water Board by phone that possible background contamination has occurred, shall follow up with written notification by certified mail within seven days, and shall obtain two new independent VOC samples from that Background Monitoring Point and send them for laboratory analysis of all detectable VOCs within thirty days. **If either or both these retest samples validates the presence of VOC(s) at that Background Monitoring Point**, using the above procedure, the discharger shall:

1. **Notification**–Immediately notify the Regional Water Board about the VOC(s) verified to be present at that Background Monitoring Point, and follow up with written notification submitted by certified mail within seven days of validation; and

2. **Report**–Within 180 days of validation, submit a report, acceptable to the Executive Officer, which examines the possibility that the detected VOC(s) originated from the Unit (e.g., using concentration gradient analyses) and proposes appropriate changes to the monitoring program.

(B) **VOCs not from landfill**–If, after reviewing the report submitted under §(c)(6)(A)2., the Executive Officer determines that the VOC(s)

detected originated from a source other than the Unit, the Executive Officer will make appropriate changes to the monitoring program.

(C) **VOCs likely from landfill**–If, after reviewing the report submitted under §(c)(6)(A)2., the Executive Officer determines that the detected VOC(s) most likely originated from the Unit, the discharger shall conclude that a release has been detected and shall immediately begin carrying out the requirements of §(c)(4) of this section.

(d) **WATER SAMPLING AND ANALYSIS FOR DETECTION MONITORING.**

(1) **Water quality monitoring systems**–The monitored media, and the Monitoring Points and Background Monitoring Points for each such medium, are those listed in the Monitoring and Reporting Program for the landfill, pursuant to §8(c) of this Order.

(2) **Thirty-Day Sample Procurement Limitation.**

(A) **Latter third / thirty days**—For any given monitored medium, samples shall be taken from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given Reporting Period [under §(b) of this section] shall all be taken during the latter third of the Reporting Period within a span not exceeding 30 days, and shall be taken in a manner that insures sample independence to the greatest extent feasible [23 CCR §2550.7(e)(12)(B)]. Sample procurement shall be carried out as late in the Reporting Period as feasible, considering the time needed to analyze the samples, analyze the resulting data, and to prepare and submit the monitoring report within thirty days after the end of the Reporting Period.

(B) **Elevation / Field Parameters**—Ground water sampling shall also include an accurate determination of the ground water surface elevation and field parameters (temperature, electrical conductivity, turbidity) for that Monitoring Point or Background Monitoring Point [23 CCR §2550.7(e)(13)]. Ground water elevations taken prior to purging the well and sampling for Monitoring Parameters shall be used to fulfill the Spring and Fall ground water flow rate/direction analyses required under §(e), below.

(C) **Data analysis ASAP**—Statistical or non-statistical analysis shall be carried out as soon as the monitoring data is available, in accordance with §(f) of this section.

(e) **Quarterly Determination of Ground Water Flow Rate/Direction [23 CCR §2550.7(e)(15)]**–For each monitored ground water body, the discharger shall measure the water level in each well and determine ground water flow rate and direction at least quarterly, including the times of expected highest and lowest elevations of the water level for the respective ground water body. Ground water elevations for all background and downgradient wells for a given ground water body shall be measured within a period of time short enough to avoid temporal variations in ground water flow which could preclude accurate determination of ground water flow rate and direction [40CFR §258.53(d)]This information shall be

included in the twice-yearly monitoring reports required under §(b)(1) of this section.

(f) **Statistical and Non-Statistical Analysis of Sample Data During a Detection Monitoring Program**–The following data analysis methods shall be used at MSW landfills unless and until the discharger proposes, and the Regional Water Board revises the waste discharge requirements to include, data analysis methods that comply with the July 1, 1991 revision of Article 5 of Chapter 15 (**revised Article 5**); nevertheless, dischargers who own or operate MSW landfills having waste discharge requirements that have been revised to comply with revised Article 5 shall use the following non-statistical data analysis methods for constituents that cannot be addressed by statistical means and shall use the following statistical analysis scheme on those constituents for which the Regional Water Board has not yet approved a statistical method.

The discharger subject to this section shall use the most appropriate of the following methods to compare the downgradient concentration of each monitored constituent (or parameter) with its respective background concentration to determine if there has been a release from the Unit. For any given data set, the discharger shall first decide if statistical analysis is possible, by reference to the relative frequency with which the constituent is detected in background samples [see §(f)(1)]. For a constituent that qualifies for statistical analysis, the discharger shall proceed sequentially down the list of statistical analysis methods listed in §§(f)(1)(A–C), using the first method for which the data qualifies. Those constituents for which no statistical method [under §(f)(1)] is appropriate shall be analyzed by the non-statistical method in §(f)(2). If the initial statistical/non-statistical analysis tentatively indicates the detection of a release, the discharger shall implement the retest procedure under §(f)(3).

(1) **Statistical Methods.** The discharger shall use one of the following statistical methods to analyze Constituents of Concern or Monitoring Parameters which exhibit concentrations exceeding their respective MDL in at least ten percent of the background samples taken during that Reporting Period. Except for pH, which uses a two-tailed approach, the statistical analysis for all constituents and parameters shall be one-tailed (testing only for statistically significant increase relative to background):

(A) **One-Way Parametric Analysis of Variance (ANOVA), followed by multiple comparisons [§2550.7(e)(8)(A)]**–This method requires at least four independent samples from each Monitoring Point and Background Monitoring Point during each sampling episode. It shall be used when the background data for the parameter or constituent, obtained during a given sampling period, has not more than 15% of the data below the PQL. Prior to analysis, replace all "trace" determinations with a value halfway between the PQL and the MDL values reported for that sample run, and replace all "non-detect" determinations with a value equal to half the MDL value reported for that sample run. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to

be rejected at any Monitoring Point, the discharger shall conclude that a release is tentatively indicated for that parameter or constituent and shall immediately implement the retest procedure under §(f)(3);

(B) **One-Way Non-Parametric ANOVA (Kruskal-Wallis Test), followed by multiple comparisons**–This method requires at least nine independent samples from each Monitoring Point and Background Monitoring Point; therefore, the discharger shall anticipate the need for taking more than four samples per Monitoring Point, based upon past monitoring results. This method shall be used when the pooled background data for the parameter or constituent, obtained within a given Rampling Period, has not more than 50% of the data below the PQL. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the discharger shall conclude that a release is tentatively indicated for that parameter or constituent and shall immediately implement the retest procedure under §(f)(3); or

(C) **Method of Proportions**–This method shall be used if the "combined data set" -- the data from a given Monitoring Point in combination with the data from the Background Monitoring Points -- has between 50% and 90% of the data below the MDL for the constituent or parameter in question. This method **1.** requires at least nine downgradient data points per Monitoring Point per Reporting Period, **2.** requires at least thirty data points in the combined data set, and **3.** requires that $n * P > 5$ (where n is the number of data points in the combined data set and P is the proportion of the combined set that exceeds the MDL); therefore, the discharger shall anticipate the number of samples required, based upon past monitoring results. The test shall be carried out at the 99% confidence level. If the analysis results in rejection of the Null Hypothesis (i.e., that there is no release), the discharger shall conclude that a release is tentatively indicated for that constituent or parameter, and shall immediately implement the retest procedure under §(f)(3).

(2) **Non-Statistical Method**–The discharger shall use the following non-statistical method for analyzing all constituents which are not amenable to statistical analysis by virtue of having being detected in less than 10% of applicable background samples. A separate variant of this test is used for the VOC_{water} Composite Monitoring Parameter and for qualifying Constituents of Concern. Regardless of the test variant used, the method involves a two-step process: **(A)** from all constituents to which the test variant applies, compile a list of those constituents which exceed their respective MDL in the downgradient sample from a given Monitoring Point, then **(B)** evaluate whether the listed constituents meet either of the test variant's two possible triggering conditions. For each Monitoring Point, the list described above shall be compiled based on either: the data from the single sample (for that constituent) taken during that Reporting Period from that Monitoring Point, or (where several independent samples have been analyzed for that constituent

at a given Monitoring Point) the data from the sample which contains the largest number of detected constituents. Background shall be represented by the data from all samples taken from the appropriate Background Monitoring Points during that Reporting Period (at least one sample from each Background Monitoring Point). The method shall be implemented as follows:

(A) **Version for the Volatile Organics Composite Monitoring Parameter For Water Samples (VOC_{water})**–For any given Monitoring Point, the VOC_{water} Monitoring Parameter is a composite parameter addressing all detectable VOCs, including at least all 47 VOCs listed in Appendix I to 40 CFR Part 258. The discharger shall compile a list of each VOC which **1.** exceeds its MDL in the Monitoring Point sample, ***and also*** **2.** exceeds its MDL in ***less than*** ten percent of the samples taken during that Reporting Period from that medium's Background Monitoring Points. The discharger shall conclude that a release is tentatively indicated for the VOC_{water} composite Monitoring Parameter if the list ***either*** **1.** contains two or more VOCs (>MDL), ***or*** **2.** contains one VOC that exceeds its PQL;

(B) **Version for Constituents of Concern**–As part of the Constituent of Concern monitoring effort required under §(b)(3) of this section, for each Monitoring Point, the discharger shall compile a list of constituents of concern that exceed their respective MDL at the Monitoring Point yet do so in less than ten percent of the background samples taken during that Reporting Period. The discharger shall conclude that a release is tentatively indicated if the list ***either*** **1.** contains two or more constituents (>MDL), ***or*** **2.** contains one constituent which exceeds its PQL.

(3) **Discrete Retest [23 CCR §2550.7(e)(8)(E)]**–In the event that the discharger concludes that a release has been tentatively indicated [pursuant to §§(f)(1 or 2), above], the discharger shall collect two new suites of samples (for VOC_{water} or for the indicated Constituent[s] of Concern) from the indicating Monitoring Point within 30 days of such indication. Resampling of the Background Monitoring Points is optional. As soon as the retest data is available, the discharger shall **use the same statistical method (or non-statistical comparison)** as that which provided the tentative indication of a release **to separately analyze each of the two suites of retest data** for the affected Monitoring Point. For any indicated Monitoring Parameter or Constituent of Concern, if the test results of either (or both) of the retest data suites confirms the original indication, the discharger shall conclude that a release has been discovered and shall carry out the requirements of §(c)(4) of this section. All retests shall be carried out only for those Monitoring Point(s) at which a release is tentatively indicated, and only for the Constituent of Concern or Monitoring Parameter which triggered the indication there, as follows:

(A) **ANOVA retest**–If a (parametric or non-parametric) ANOVA method was used in the initial test, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two new suites of samples taken from the indicating Monitoring Point;

(B) **Method of Proportions retest**–If the Method of Proportions statistical test was used, the retest shall consist of a full repeat of the statistical test for the indicated constituent or parameter, carried out separately on each of the two new suites of samples from the indicating Monitoring Point;

(C) **Non-Statistical Method retest**–If the non-statistical method was used:

1. **For VOC_{water}**–Because the VOC_{water} composite Monitoring Parameters is a single parameter which addresses an entire family of constituents likely to be present in any landfill release, **the scope of the laboratory analysis for each of the two retest samples shall include all VOCs detectable in that retest sample.** Therefore, a confirming retest for either parameter shall have validated the original indication even if the detected constituents in the confirming retest sample(s) differs from those detected in the sample which initiated the retest;

2. **For COCs**–Because all Constituents of Concern that are jointly addressed in the non-statistical test under §(f)(2)(B), above, remain as individual Constituents of Concern, **the scope of the laboratory analysis for the non-statistical retest of Constituents of Concern shall address only those constituents detected in the sample which initiated the retest.**

§14. CLOSURE/POST-CLOSURE PLAN.

(a) **Older closed units exempted**—This section applies only to MSW landfills that have received waste on or after October 9, 1991.

(b) **Recently closed units**–The discharger who owns or operates an MSW landfill that received waste on or after October 9, 1991, that will have stopped receiving waste by October 9, 1993, and that will have completed final closure within six months after the last receipt of waste shall **submit a report** to the Regional Water Board **by October 9, 1993.** This report shall either **(1)** validate that the landfill's final cover meets the requirements of 40 CFR §258.60(a), or **(2)** include any necessary updates to the closure plan and propose changes to the final cover necessary to bring the landfill into compliance with 40 CFR §258.60(a);

(c) **Operating units**–The discharger who owns or operates an MSW landfill that received waste on or after October 9, 1991, and that will not have initiated final closure as of October 9, 1993, **shall submit a closure and post-closure maintenance plan** (or submit suitable modifications to a pre-existing plan) **by October 9, 1993,** that complies with 40 CFR §§258.60 and 258.61 and with Article 8 of Chapter 15.

§15. DEED NOTATION AT MSW LANDFILLS.

(a) **Schedule**–All MSW landfills listed in §1 of this Order shall comply with the requirements of §(b) of this section in accordance with the following schedule:

(1) **Early closures**–Dischargers owning or operating an MSW landfill that completed final closure prior to October 9, 1991, shall comply with §(b) of this section and **provide proof** of such compliance to the Regional Water Board **by October 9, 1995**;

(2) **Closed since October 8, 1991**–For all MSW landfills that completed final closure between the close of business on October 8, 1991, and the effective date of this Order, the discharger shall comply with §(b) of this section and **provide proof** of such compliance to the Regional Water Board **by October 9, 1993**;

(3) **Operating MSW landfills**–For all MSW landfills that are either operating or have not completed closure, as of the effective date of this Order, the discharger shall comply with §(b) of this section and **provide proof** of such compliance to the Regional Water Board **within sixty days after completing final closure**.

(b) **Notation**–In accordance with the deadline provided under §(a) of this section, the discharger shall provide proof to the Regional Water Board that the deed to the landfill facility property, or some other instrument that is normally examined during title search, has been modified to include, in perpetuity, a notation to any potential purchaser of the property stating that:

(1) **Parcel history**—The parcel has been used as an MSW landfill;

(2) **Parcel use limitations**—Land use options for the parcel are restricted in accordance with the post-closure land uses set forth in the post-closure plan and in WDRs for the landfill; and

(3) **New owner's responsibility**—In the event that the discharger defaults on carrying out either the post-closure maintenance plan or any corrective action needed to address a release, then the responsibility for carrying out such work falls to the property owner.

§16. INTERIM CLASSIFICATION.

This section applies to all MSW landfills listed in §1 that, as of the effective date of this Order, have not been reclassified under 23 CCR §§2510(d,e), 2530(b), and 2591(c).

(a) **Interim Class III status granted**–MSW landfills subject to this section are hereby granted interim status as Class III landfills under Chapter 15, as of the effective date of this Order, unless and until the landfill is reclassified in accordance with that chapter.

(b) **Revised ROWD required**–Dischargers owning or operating an MSW landfill subject to this section shall **submit a revised report of waste discharge by October 9, 1994,** that is in full compliance with Article 9 of Chapter 15 and that provides all information necessary for the Regional Water Board to reclassify the landfill pursuant to 23 CCR §§2510(d,e) and 2591(c). Dischargers who have submitted such a report prior to the effective date of this Order shall submit a letter to that effect, in place of resubmitting the report.

§17. CERTIFICATION.

This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics.

I, Loretta K. Barsamian, Acting Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on September 15, 1993.

Loretta K. Barsamian

Loretta K. Barsamian
Acting Executive Officer

INDEX TO ORDER

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CALIFORNIA WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. 96-040

WASTE DISCHARGE REQUIREMENTS
AND RECISION OF ORDER NO. 88-27 FOR:

THE CITY OF MOUNTAIN VIEW
SHORELINE REGIONAL PARK (544-ACRE SITE), VISTA AND CRITTENDEN SITES, CLASS III SOLID WASTE DISPOSAL SITE
MOUNTAIN VIEW, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. The City of Mountain View (hereinafter called the discharger) owns and operates an inactive Class III Solid Waste Disposal Site known as the Shoreline Regional Park (formerly called the Mountain View Landfill). The Solid Waste Disposal Site is composed of the 544-Acre Site containing approximately 350 landfilled acres, the Vista Site containing 84 landfilled acres, and the Crittenden Site containing 27 landfilled acres (hereinafter referred to collectively as the LANDFILL). The LANDFILL is located within the City of Mountain View adjacent to areas of salt evaporation ponds along San Francisco Bay.

PURPOSE OF ORDER UPDATE:

2. The primary objectives of this Order are to revise the landfill's groundwater, surface water and leachate monitoring program, and to bring the site into full compliance with the appropriate requirements of Article 5, Chapter 15, Title 23 of the California Code of Regulations. Additionally, this Order requires the discharger to incorporate the requirements of the General Industrial Stormwater Runoff program and to document if the 544 acre parcel final cover construction is in compliance with the requirements of Order No. 78-11 as amended by Order Nos. 81-26 and 88-27. The discharger is also required to establish an inward gradient or single point (s) of extraction of groundwater to prevent a release of leachate beyond the point of compliance

OWNERS & OPERATORS:

3. The City of Mountain View is the present owner of the LANDFILL. Prior to the acquisition of the landfill by the City in mid-1984, the Crittenden parcel was owned and operated by the Ferrari Brothers. Laidlaw Waste System, Inc. operated the 544-

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